Docket No.: FCI-2714

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App No.: Not yet assigned Filed: 08/05/03

Title: ELECTRICAL CONNECTORS HAVING CONTACTS THAT MAY BE SELECTIVELY DESIGNATED AS EITHER SIGNAL OR GROUND CONTACTS Inventors: Minich, et al.

Attorney: Joseph R. Condo Phone: (215) 568-3100

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	_112	112	112	112	112
S+	S+	S+	S+	S+	S+
S-	S-	S-	S-	S-	S-
G	G	G	G	G	G
S+	S+	S+	S+	S+	S+
S-	S-	S-	S-	S-	S-
G	G	G	G	G	G
101	102	103	104	105	106

FIG. 1A PRIOR ART

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Attorney: Joseph R. Condo Phone: (215) 568-3100

Attorney: Joseph R. Condo Phone: (2 Sheet 2 of 68

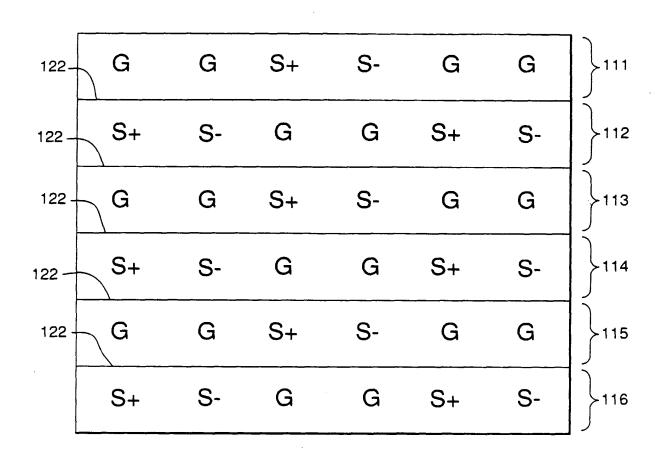


FIG. 1B PRIOR ART

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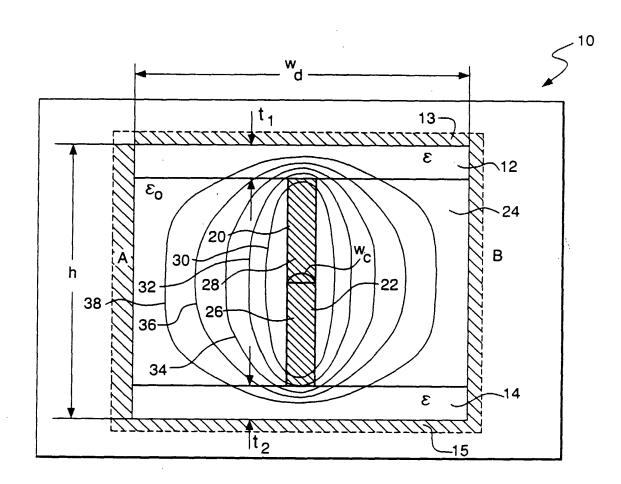


FIG. 2A

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S G S S S S 42 42 46 G S G S G 42 42) G G S H-S S S S G S G S 44) 42 G S S G S S S S G S G S G

FIG. 2B

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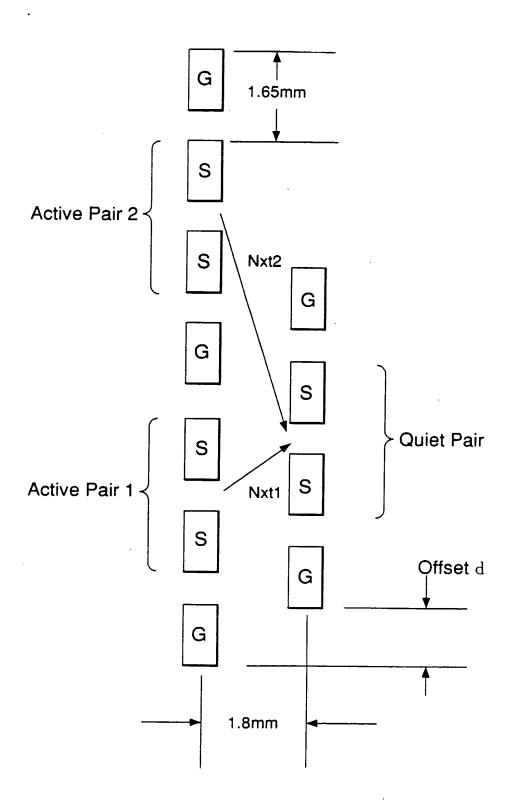


FIG. 3A

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NEXT vs. Offset
1.8 mm Col Spacing, 1.65 mm Row Spacing

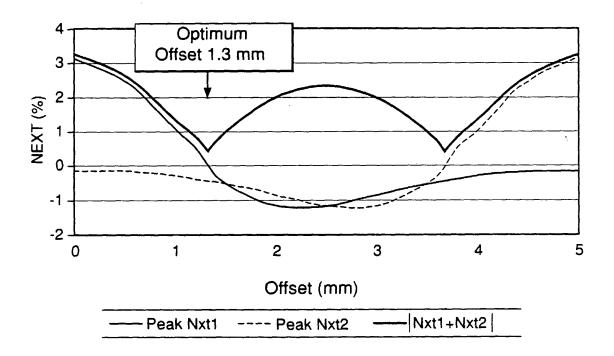


FIG. 3B

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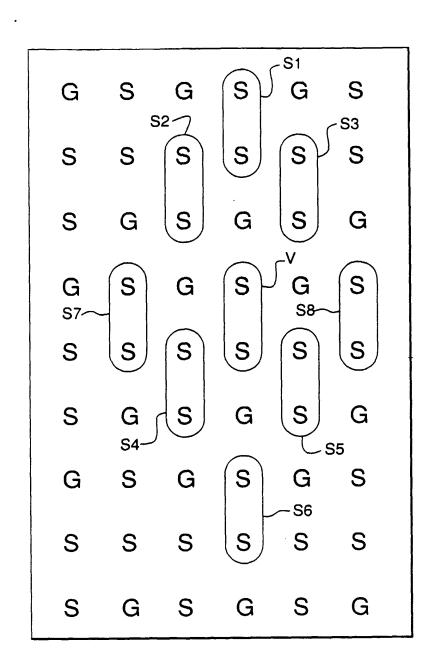


FIG. 3C

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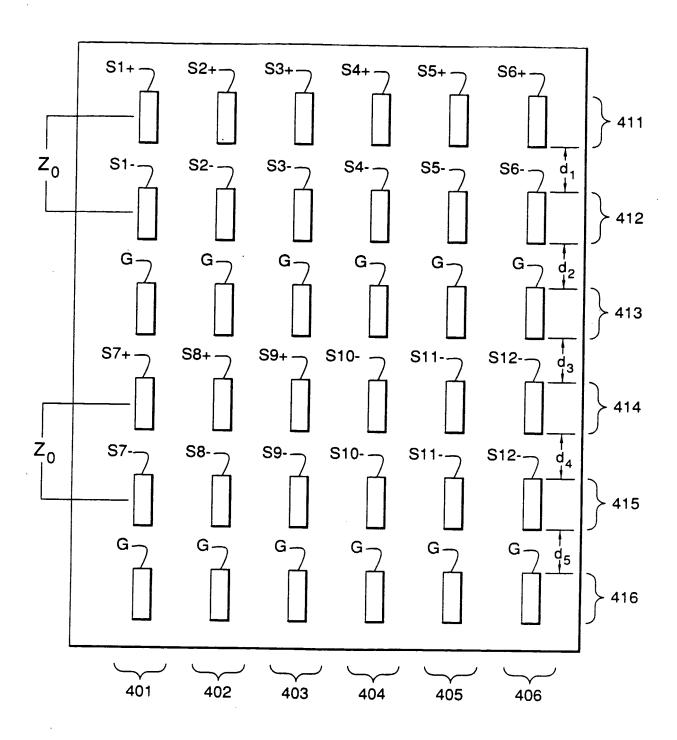


FIG. 4A

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Attorney: Joseph R. Condo Phone: (215) 568-3100
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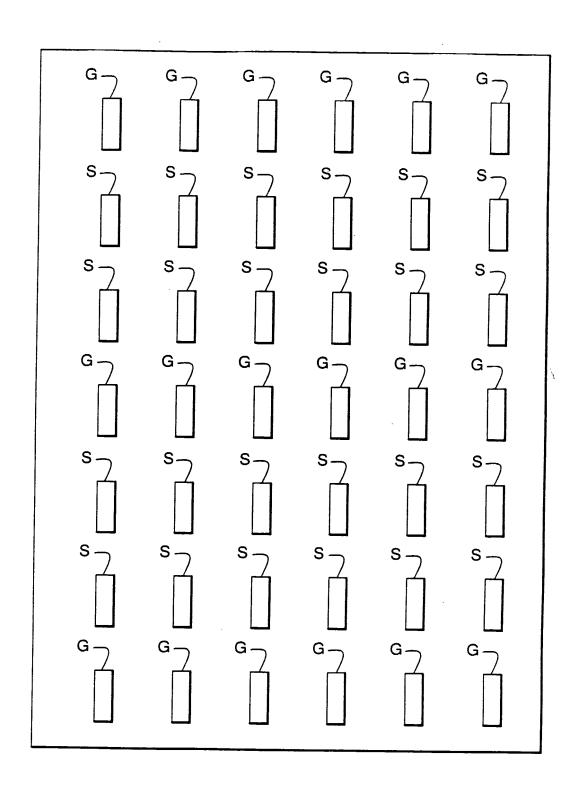


FIG. 4B

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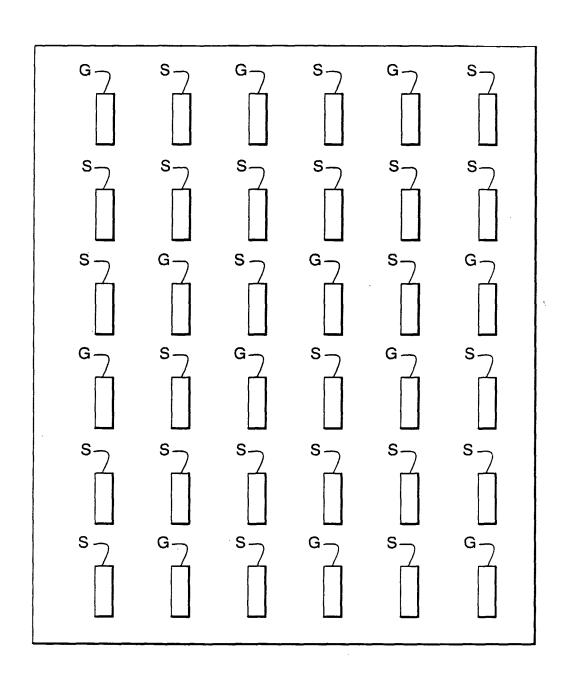


FIG. 4C

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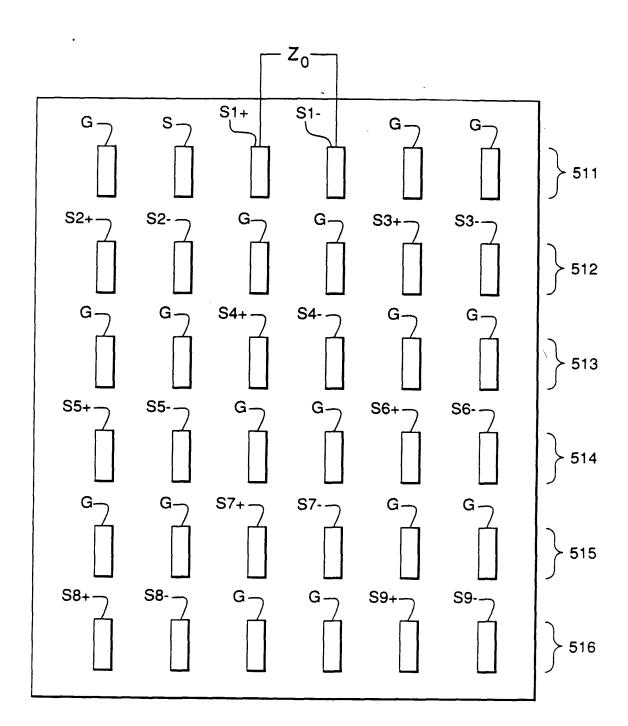


FIG. 5

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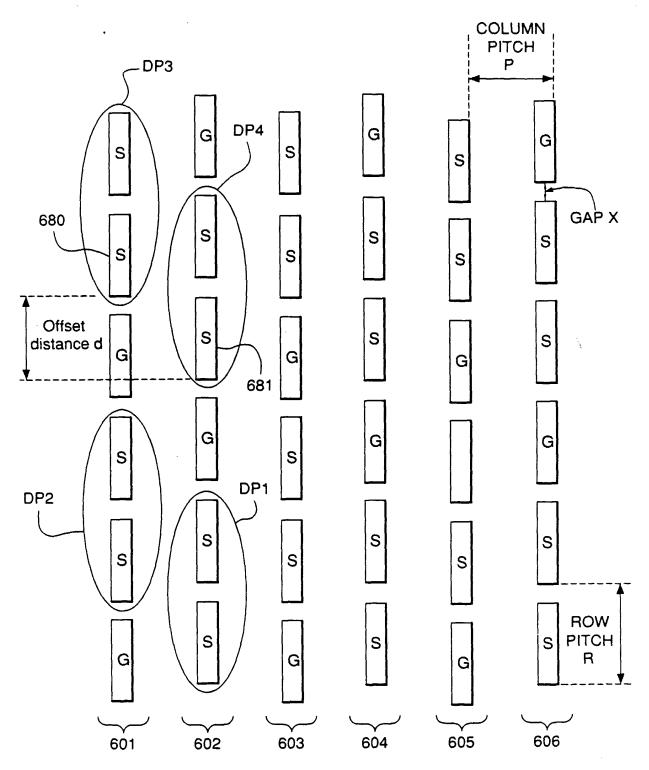


FIG. 6

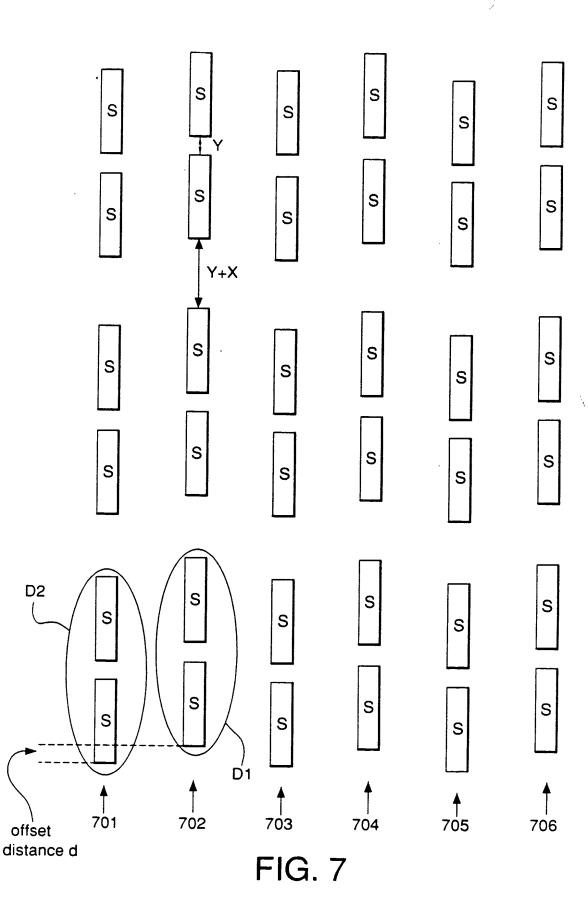
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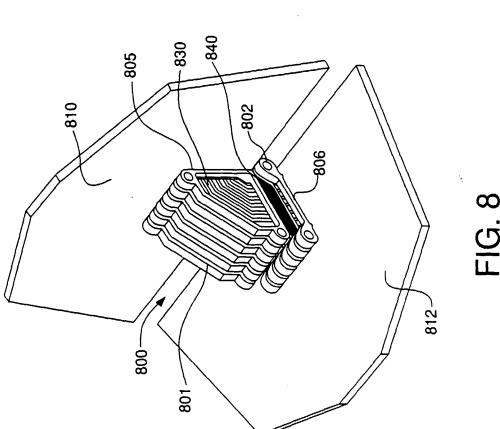
Docket No.: FCI-2714

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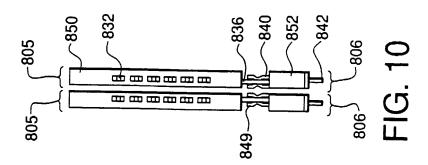


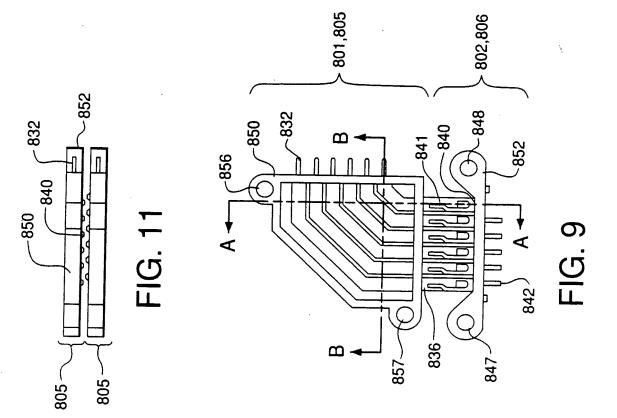
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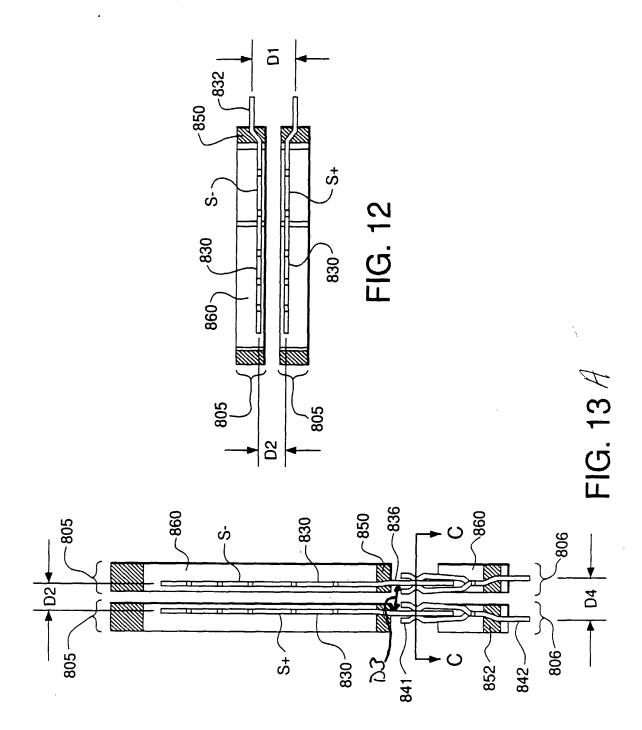




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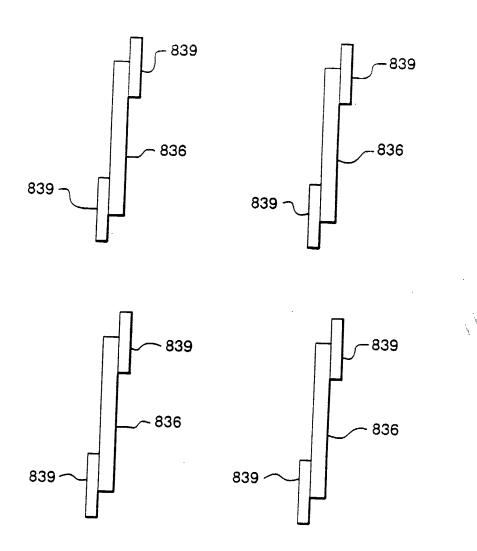
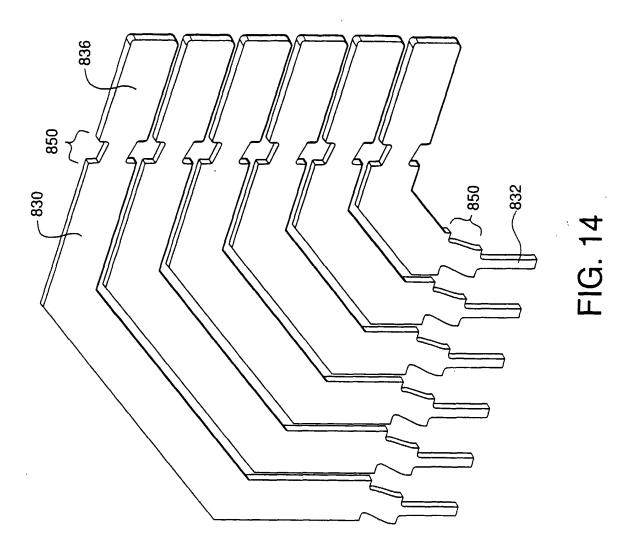
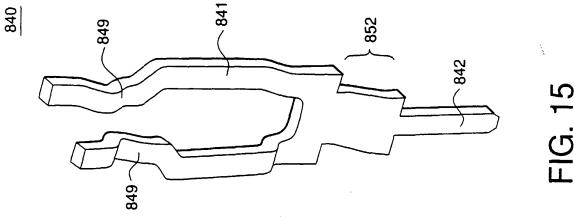


FIG. 13 B

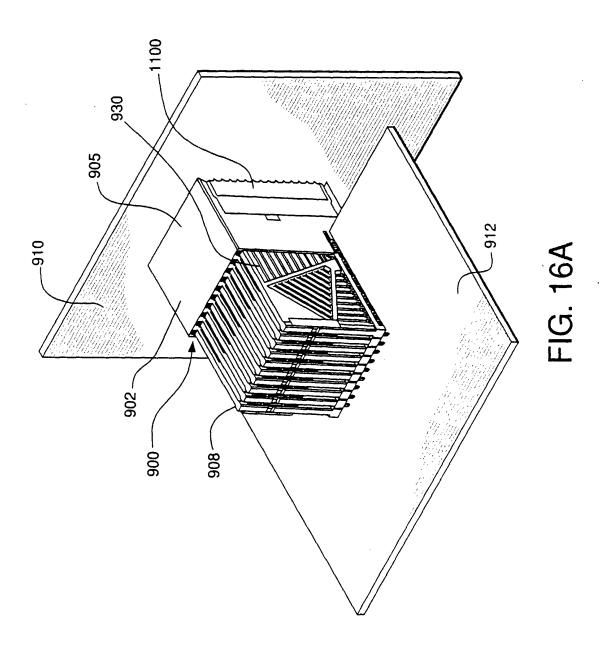


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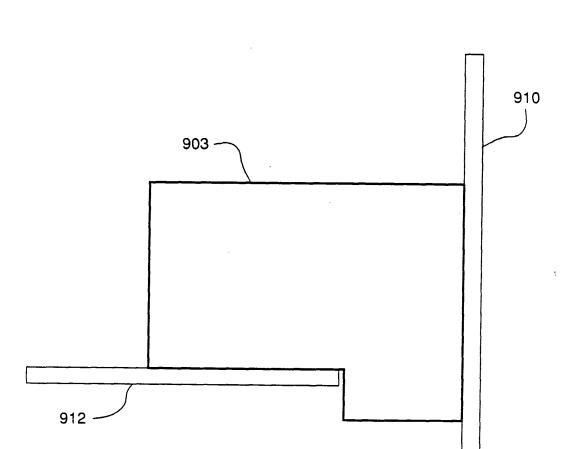


FIG. 16B

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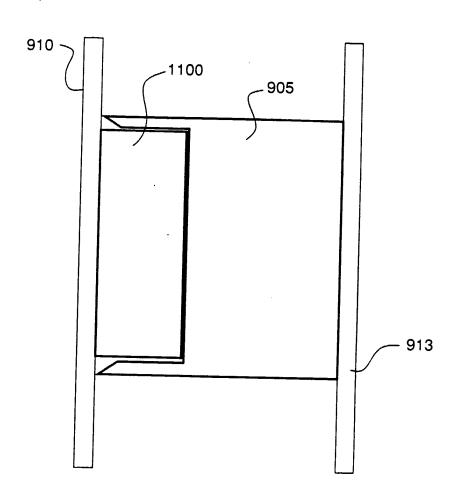


FIG. 16C

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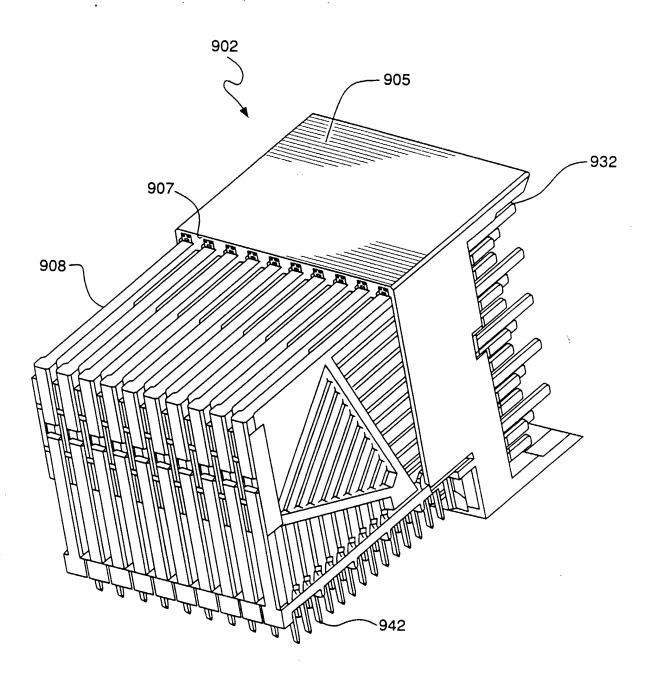


FIG. 17

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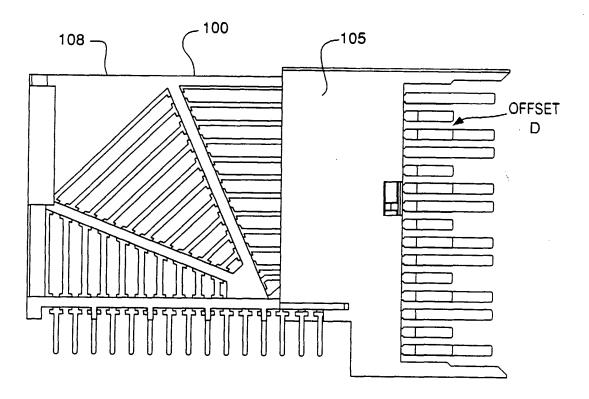
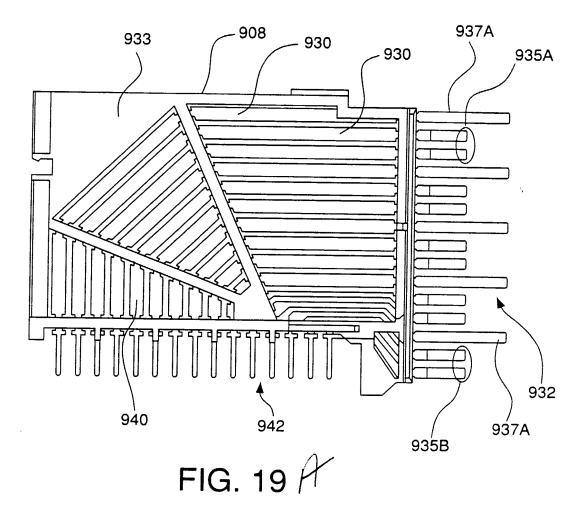


FIG. 18

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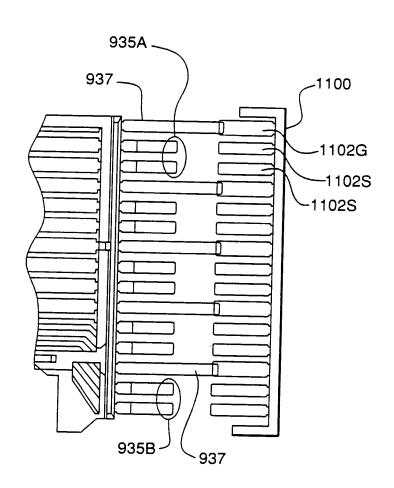


FIG. 19B

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SELECTIVELY DESIGNATED AS EITHER SIGNAL OR GROUND CONTACTS
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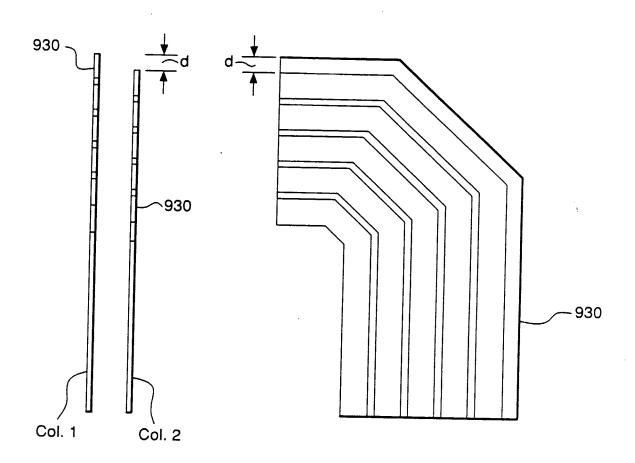


FIG. 20

FIG. 21

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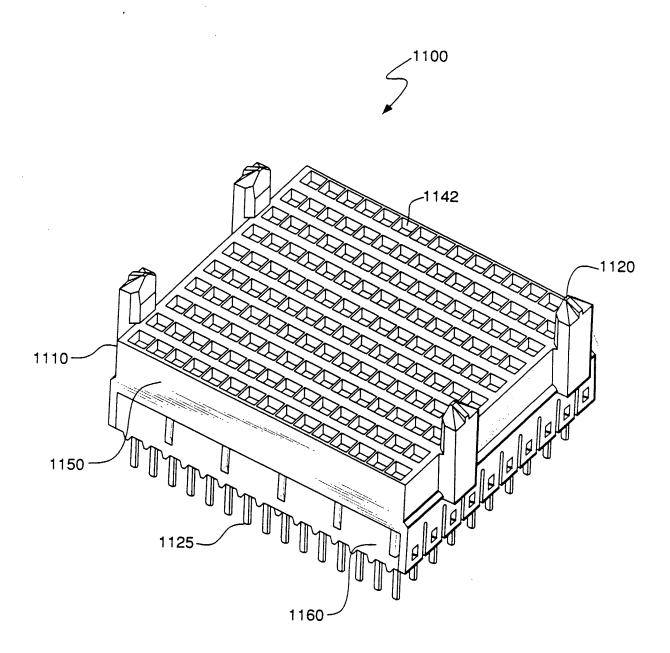


FIG. 22

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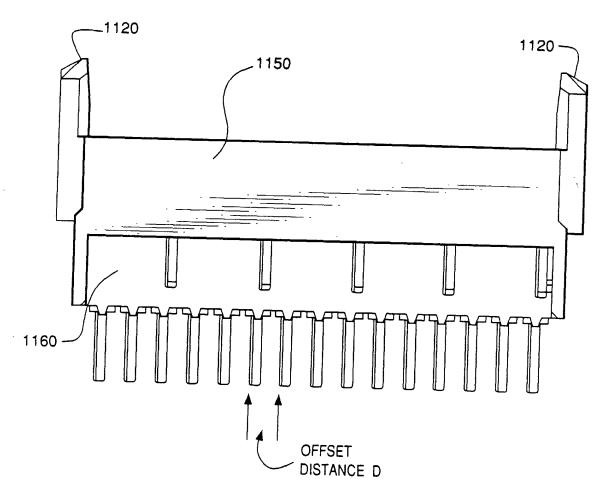


FIG. 23

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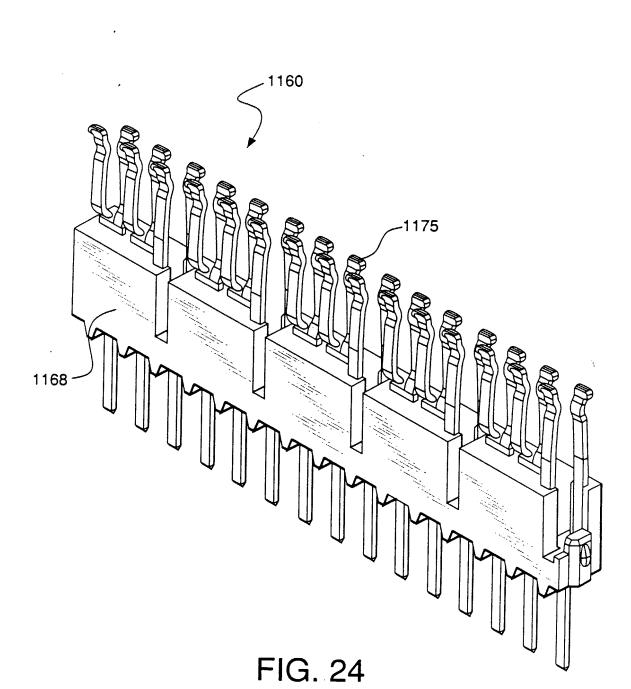
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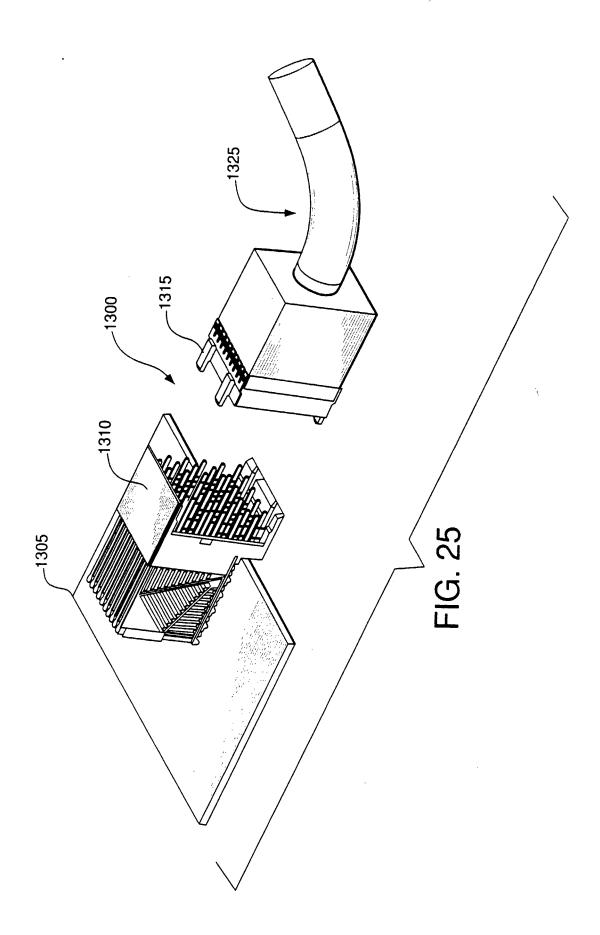
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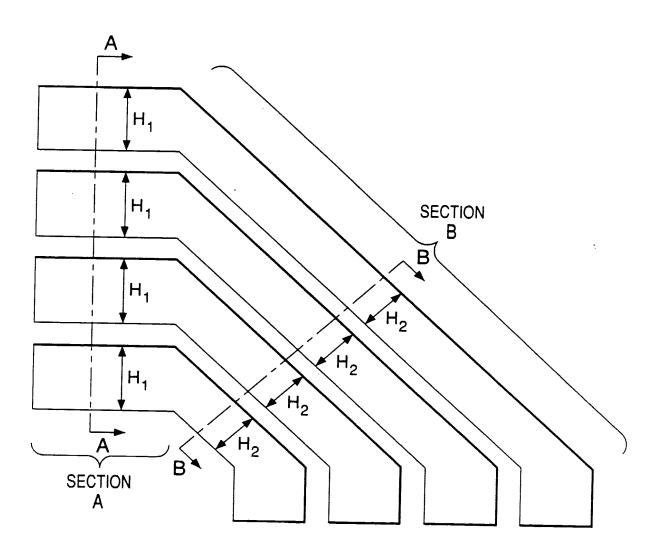


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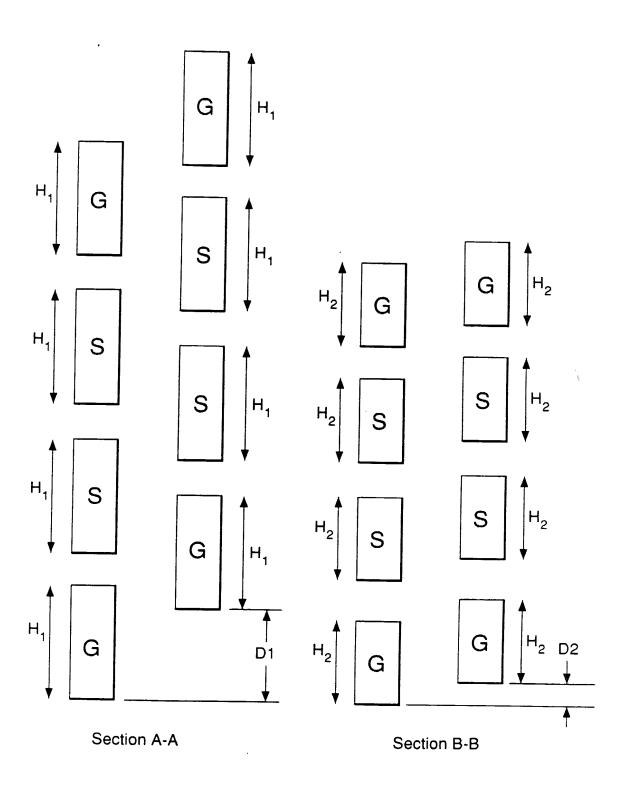


FIG. 27

FIG. 28

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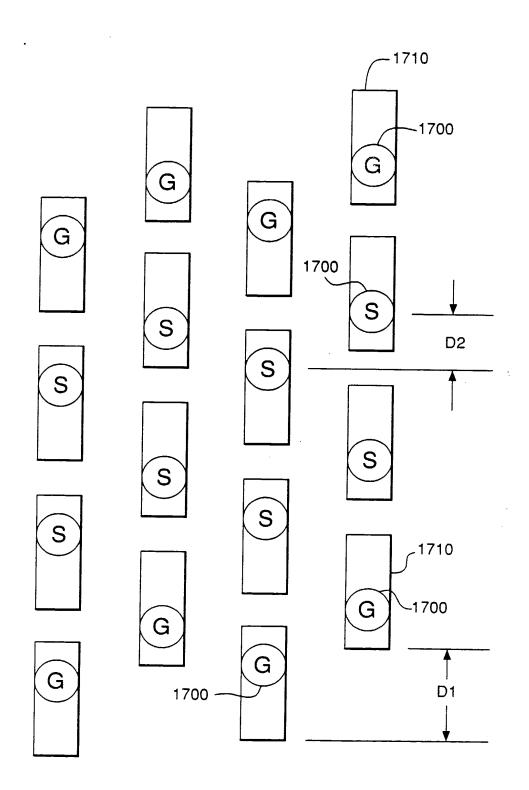
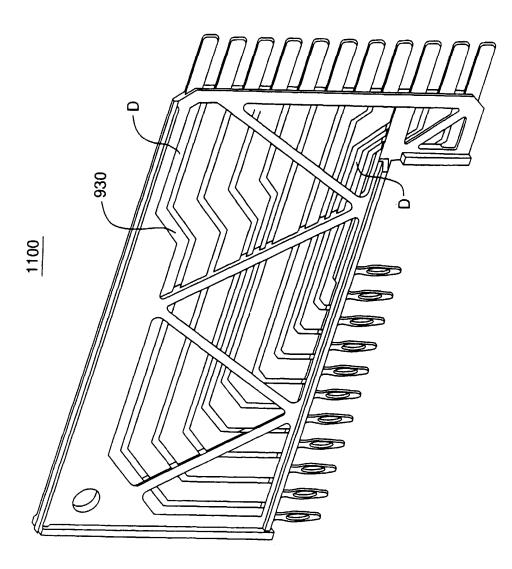
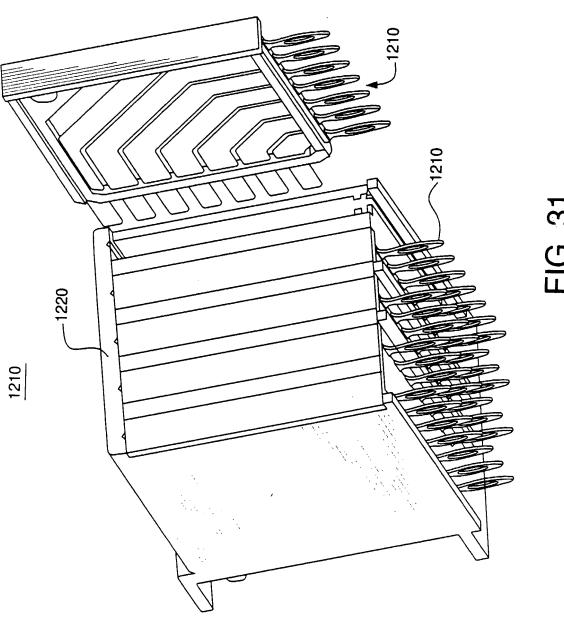


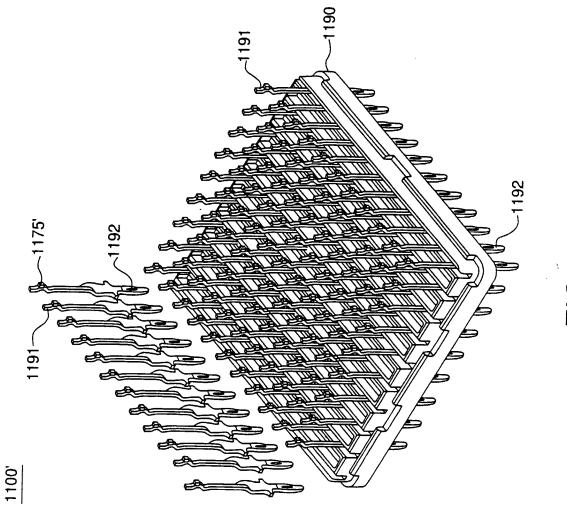
FIG. 29

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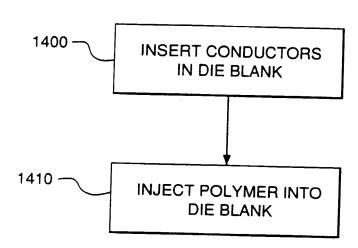
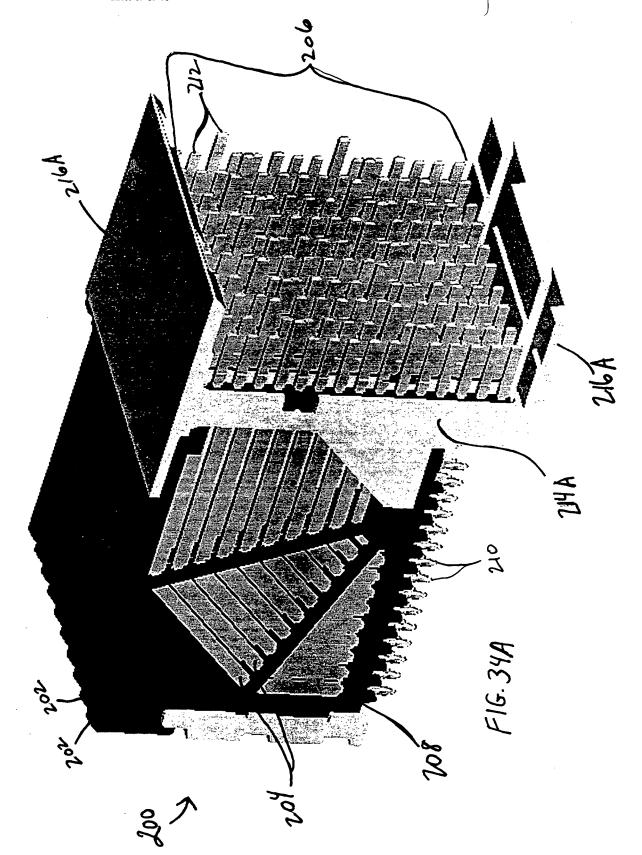


FIG. 33

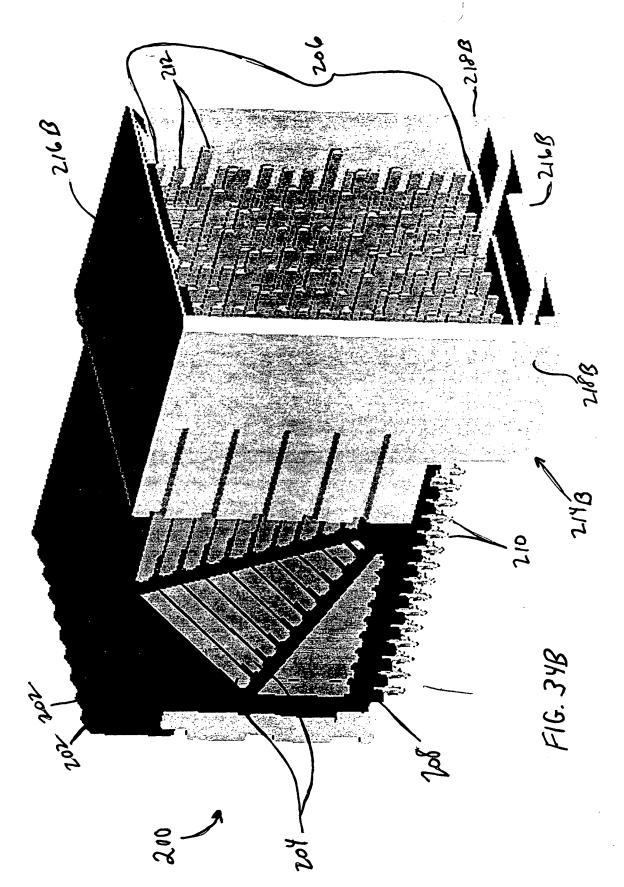
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Attorney: Joseph R. Condo
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Filed: 08

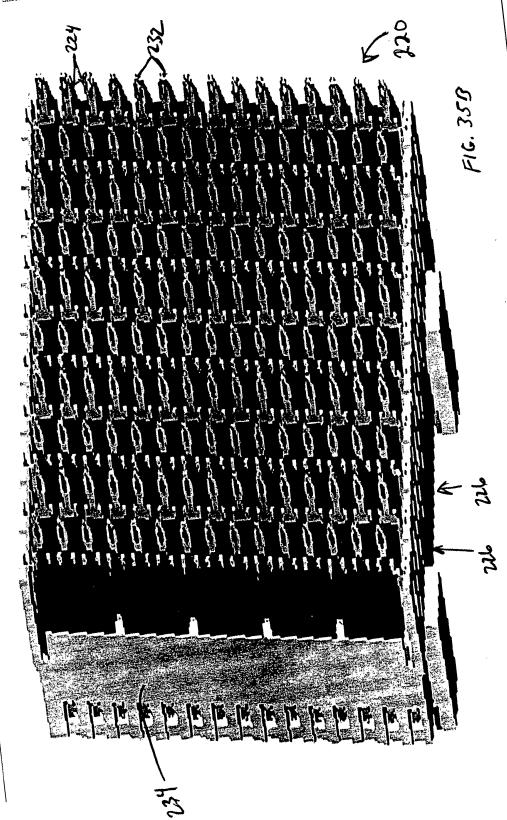
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o s	o G	° G
n s	ns	ns
\mathbf{m} \mathbf{G}	m G	m G
S	S	S
k s	k G	k G
j G	js	js
is	G	G
h	h	hs
gG	g G	9 G
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c s	c G	cs
bs	bs	bs
a G	a G	a G

FIG. 38A

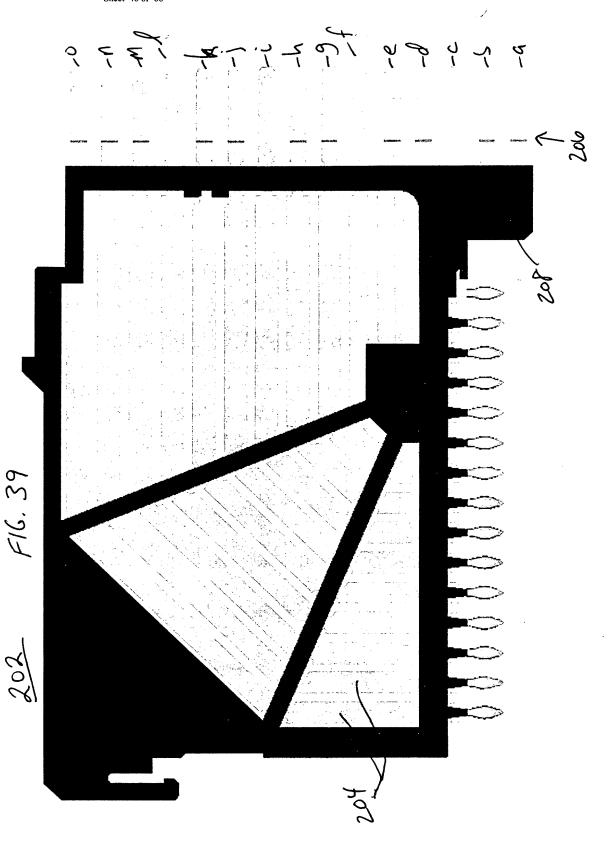
FIG. 38B

FIG. 38C

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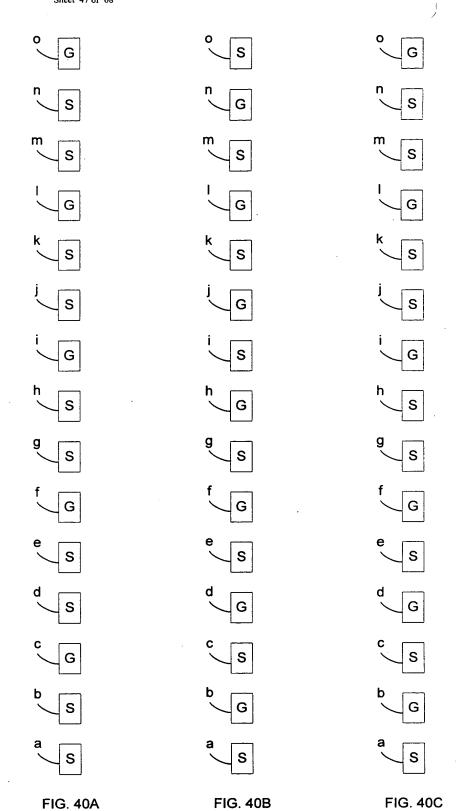


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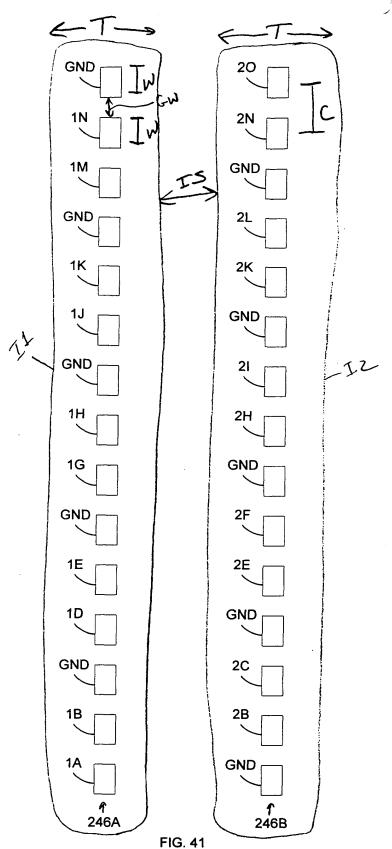
Title: ELECTRICAL CONNECTORS HAVING CONTACTS THAT MAY BE
SELECTIVELY DESIGNATED AS EITHER SIGNAL OR GROUND CONTACTS
Inventors: Minich, et al.
Attorney: Joseph R. Condo Phone: (215) 568-3100

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Inventors: Minich, et al. Attorney: Joseph R. Condo Sheet 48 of 68

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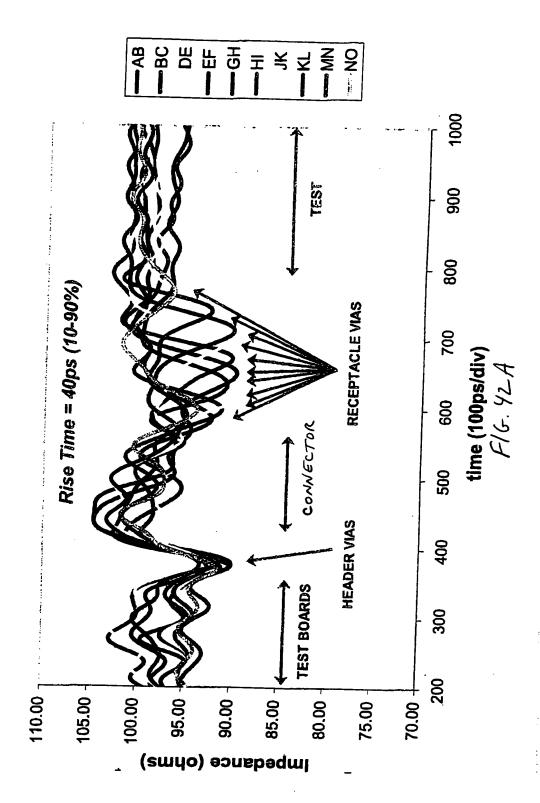


Inventors: Minich, et al.

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INSERTION LOSS

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Title: ELECTRICAL CONNECTORS HAVING CONTACTS THAT MAY BE SELECTIVELY DESIGNATED AS EITHER SIGNAL OR GROUND CONTACTS

Inventors: Minich, et al.

Attorney: Joseph R. Condo

Phone: (215) 568-3100

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Worst-Case Multi-Active Near-End Crosstalk

CROSSTALK

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Worst-Case Multi-Active Far-End Crosstalk

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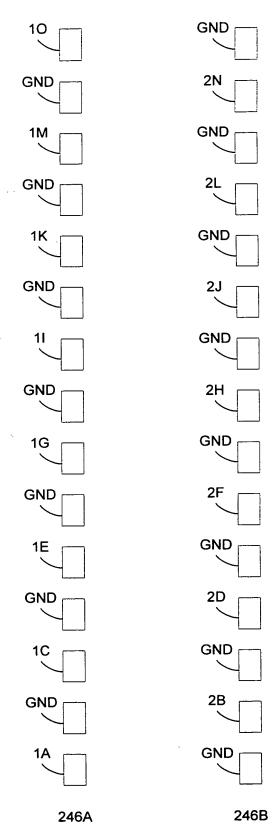
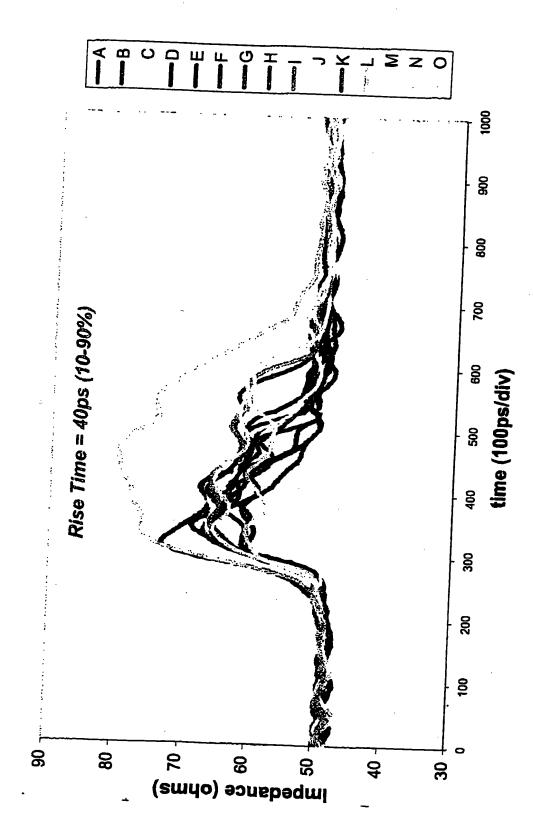


FIG. 43

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IMPEDANCE

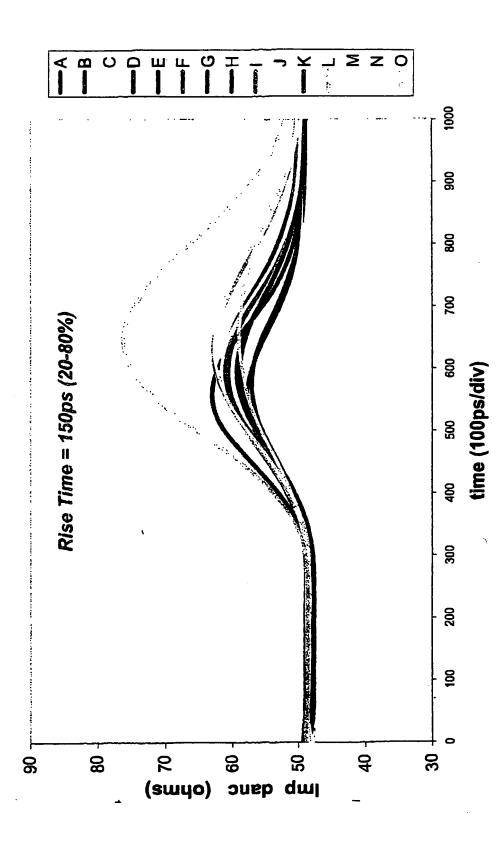
FIG. 44A

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Filed: 08/05/03
Filet: ELECTRICAL CONNECTORS HAVING CONTACTS THAT MAY BE
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Attorney: Joseph R. Condo
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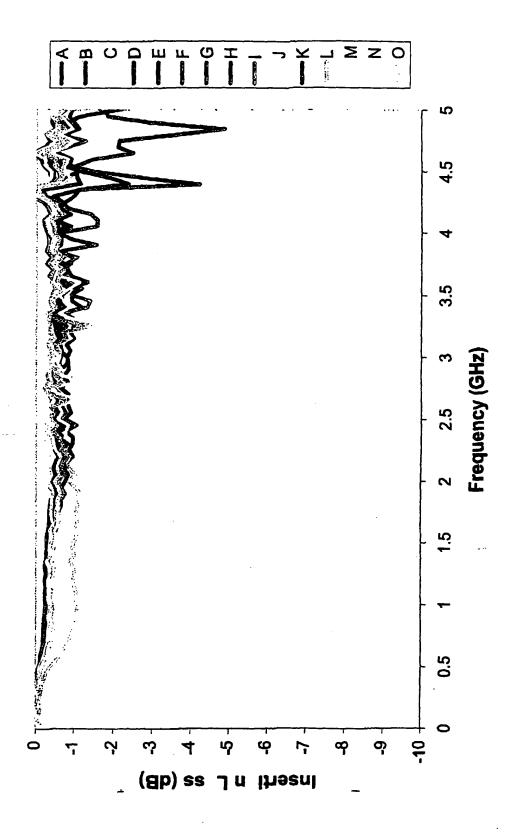
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Title: ELECTRICAL CONNECTORS HAVING CONTACTS THAT MAY BE
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Worst-Case Multi-Active Near-End Crosstalk

CROSSTALK

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Worst-Case Multi-Active Far-End Crosstalk

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-	150ps (20-80%)		

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Attorney: Joseph R. Condo

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Single-Ended IMLA to Differential IMLA

Near-End Crosstalk Approximation

2.24 2.13 2.31 SZ S S Z D S I O S II O 40ps (10-90%)

S B C

1.62

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A B - H S H H S D B S **%**[2.19 1.96 1.70 1.99 2.19 N R T O R H O R H O

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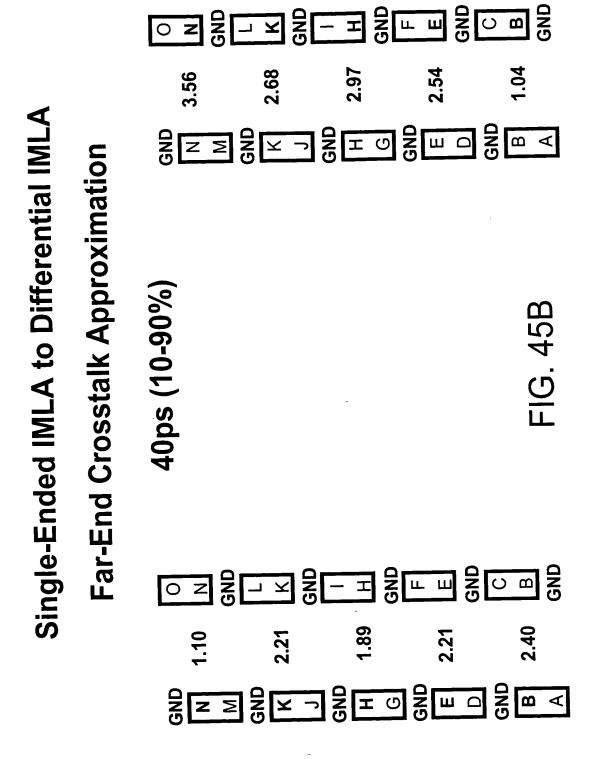
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Inventors: Minich, et al. Attorney: Joseph R. Condo

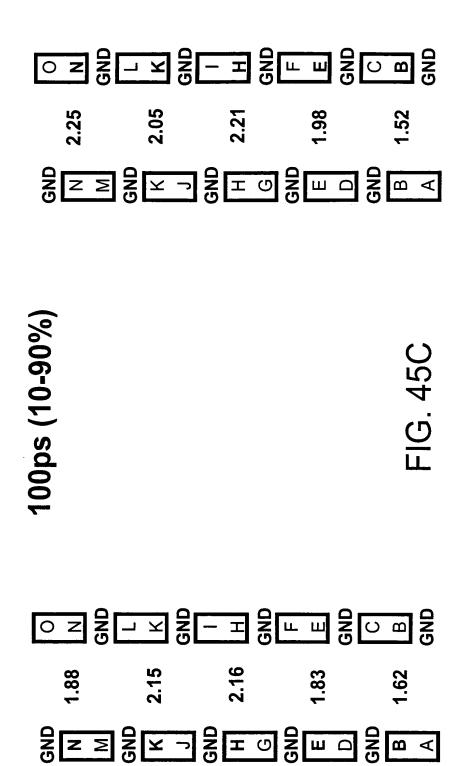
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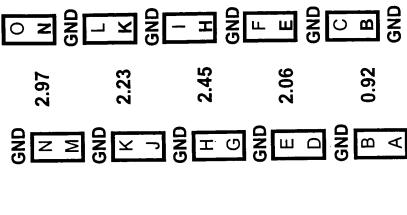


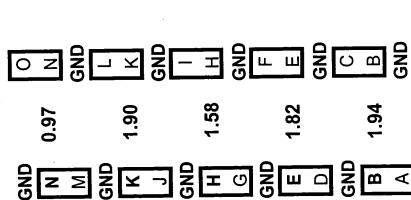
Inventors: Minich, et al. Attorney: Joseph R. Condo

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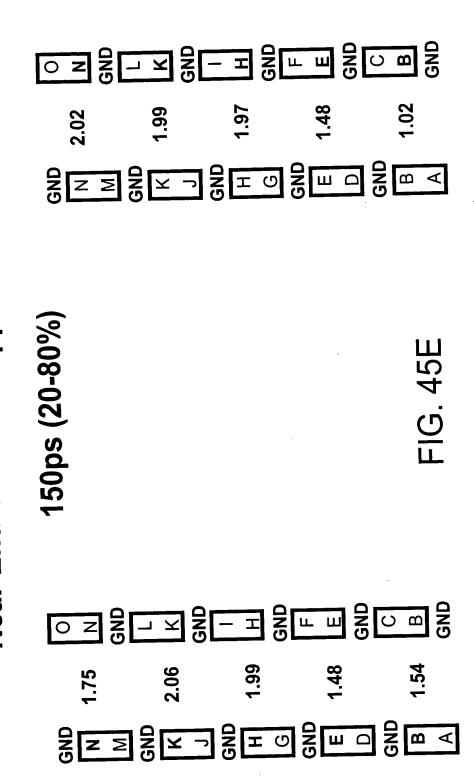
Single-Ended IMLA to Differential IMLA Far-End Crosstalk Approximation 100ps (10-90%)





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Single-Ended IMLA to Differential IMLA Near-End Crosstalk Approximation



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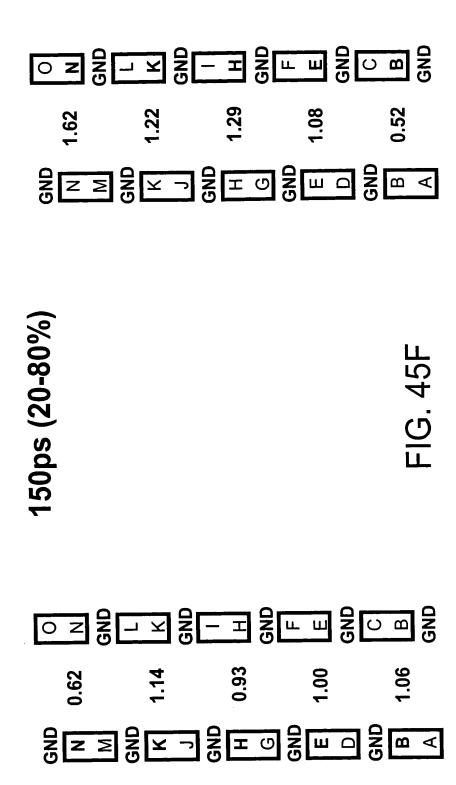
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Attorney: Joseph R. Condo Phone: (215) 568-3100

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Single-Ended IMLA to Differential IMLA Far-End Crosstalk Approximation



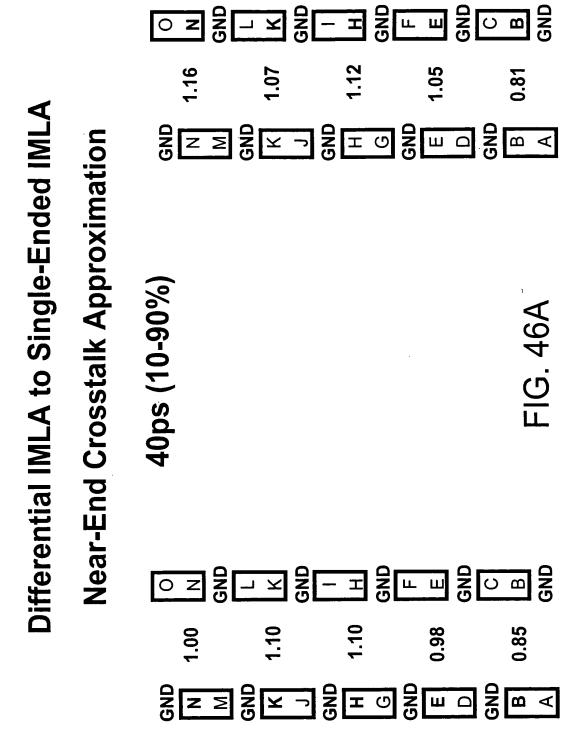
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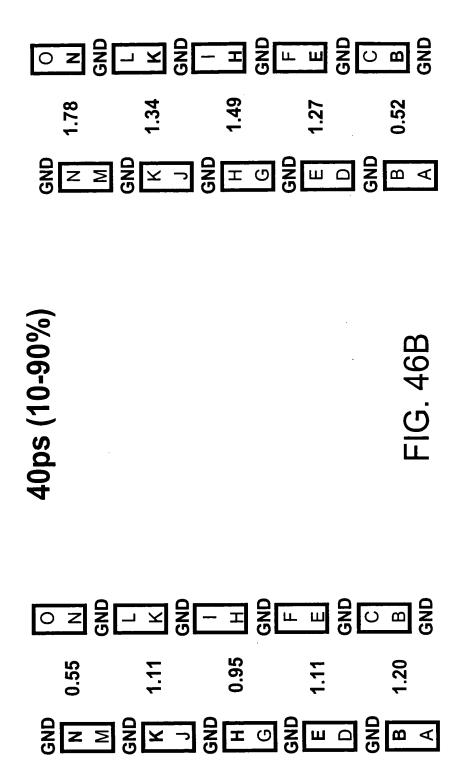


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Attorney: Joseph R. Condo

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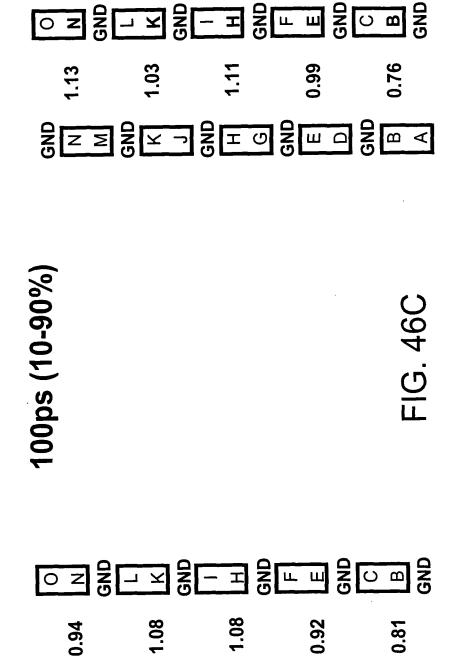




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Differential IMLA to Single-Ended IMLA **Near-End Crosstalk Approximation**



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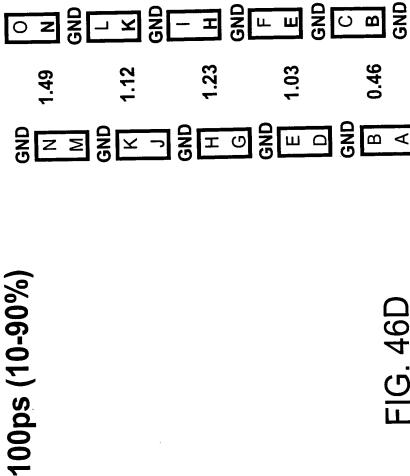


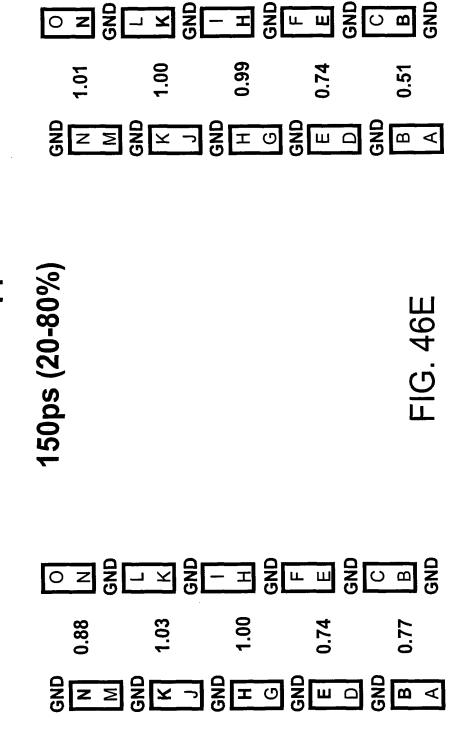
FIG. 46D

A S - I S I I I S O B S 0.79 0.95 0.97 0.49 0.91 S Z Z S Z J S E O S E O

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Differential IMLA to Single-Ended IMLA Near-End Crosstalk Approximation



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